

NATIONAL IMAGERY TRANSMISSION FORMAT STANDARD (NITFS) REQUEST FOR CHANGE (RFC)

RFC CONTROL NUMBER (To be filled in by the NTB Secretary)	96-024A
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27, 84

DOCUMENT TITLE

NATIONAL IMAGERY TRANSMISSION FORMAT (Version 2.0)

PARAGRAPH(S)

5.2.1 (added)

5.10 (added)

NATURE OF CHANGE	
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See Attached

RECOMMENDED WORDING

See Attached

REASON FOR RECOMMENDATION	
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Some imagery file generators need to begin transmitting a file before the data is available to populate all required fields in the NITF file header.

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TOTAL COST OF IMPLEMENTATION

Minimal

PROPOSED TIME FRAME OF IMPLEMENTATION
As soon as possible

ANTICIPATED USER IMPACT	Minimal. New capability is limited to a new CLEVEL (07); if the File Header is corrected by moving the correcting data over to the original header, the CLEVEL can be changed to 06 allowing access by all CLEVEL 06 capable systems.
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NTB REVIEW DATE	NTB RECOMMENDATION
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NTB RECOMMENDATION

SUBSTANTIVE ISSUES

DATE SUBMITTED TO
ISMC

DATE SUBMITTED TO DISA

ISMC REVIEW DATE

IMPLEMENTATION DATE _____

ISMC DECISION

NITF CABOOSE FILE HEADER CAPABILITY

PROBLEM STATEMENT:

Some imagery file generators need to begin transmitting a file before all the data is available that is needed to populate all required fields in the NITF file header.

ASSUMPTIONS:

1. The compressed size of an image is not known prior to the start of transmission of the specific image.
2. The content of all required fields in the image subheader is known prior to the start of transmission of that specific image, including SDE and other Tag information.
3. Number of all images and annotations is known prior to start of file transmission.
4. Number of all text components is known prior to start of file transmission.
5. Number of all DESs is known prior to start of file transmission. If the need for overflow DESs is unknown, place holder DESs (that may have no useful content) can be used to reserve a place for overflow.

ISSUES ADDRESSED:

1. How generic should the proposed mechanism be:
 - Applicable to files containing only a single image? NO
 - Applicable to files containing single and multiple images? YES
 - Applicable to JPEG compressed images? YES
 - Applicable to uncompressed images? YES (May have multiple images in file, but not know the length of follow-on images until transmission has been initiated for previous images.)
 - Applicable to any combination / permutations of valid NITF content types? YES, as long as number of components are known prior to start of transmission.
 - Applicable to any CLEVEL? NO - New CLEVEL 07 only

OUTLINE OF PROPOSED SOLUTION

- Identify a file containing a Caboose File Header as CLEVEL = 07
- Establish codes for length fields in the file header that signal the information is not available. For example, fill the fields with a negative zero value (for example, "-00000")
- Create a specific Reserved Extension Segment (RES) to be placed at the end of the file which contains the Caboose File Header information.

ADD new paragraph 5.2.1:

5.2.1 Incomplete Header. Several fields in the file header are normally used to parse the file, and contain the lengths of specific components of the file (i.e., HL through LDnnn). If all the fields in the file header cannot be filled with valid data, a special Reserved Extension Segment (see 5.10) shall be used to provide the data needed to complete the file header. Incomplete fields shall be filled with a leading minus (0x2D) and the appropriate number of "0" characters (0x30) as place holders. A system receiving a file with an incomplete header shall locate the reserved extension segment and copy the data, character by character to the beginning of the file (or interpret the data in the RES as though it is actually located at the beginning of the file).

Change Table II CLEVEL Value Definitions And Constraints:

Currently:

This field shall contain the compliance level required to interpret fully all components of the file. Valid entries are integer values 01 through 06 and 99 and are assigned in accordance with certification requirements established in JIEO Circular 9008. Values 00, and 07 through 98 are reserved for future use.

New:

This field shall contain the compliance level required to interpret fully all components of the file. Valid entries are integer values 01 through 07 and 99 and are assigned in accordance with certification requirements established in JIEO Circular 9008. Values 00, and 08 through 98 are reserved for future use.

ADD new paragraph 5.10:

5.10 Corrected File Header Reserved Extension Segment The Reserved Extension Segment defined in tables XIX and XX contains the replacement file header values described in 5.2.1. The CFHDR field of this segment shall contain a new version of the file's beginning. A system encountering incomplete file header fields (see 5.2.1) shall update the stored file by locating this segment at or near the end of the file and copying the characters of CFHDR to the beginning (FHDR and subsequent fields). Two unique delimiter fields straddle the characters of the replacement header to facilitate locating this segment by searching the area near the file end in either the forward or reverse direction. To ensure that valid delimiters are found (rather than data containing similar values), the RESCHL length field is repeated and located adjacent to each delimiter; their contents, and the number of characters between the delimiters must all agree. The segment may contain a complete file header, a subset of the file header, or may extend beyond the file header to include fields within the subsequent subheader.

ADD new tables XIX and XX:

TABLE XIX. Replacement File Header RES subheader format
(R) = required, (O) = optional, and (C) conditional

FIELD	NAME	SIZE	VALUE RANGE	TYPE
RE	File Part Type	2	RE	R
RESTAG	Unique RES type identifier	25	"Replacement File Header "	R
RESVER	Version of the data field definition	2	01	R
RESCHL	Length of CFHDR field	7	0 - 9999999	R
CFH-DELIM1	Unique delimiter 1	4	0x0A6E1D97	R
CFHDR	Replacement Data	**		R
CFH-DELIM2	Unique delimiter 2	4	0x0ECA14BF	R

RESCHL	Length of CFHDR field	7	0 - 9999999	R
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**As specified in RESCHL

TABLE XX. Replacement file Header RES subheader field definitions.

FIELD	VALUE DEFINITIONS AND CONSTRAINTS
RE	This field shall contain the characters "RE" to identify the subheader as a reserved extension.
RESTAG	This field shall contain "Replacement File Header " (without the quotes).
RESVER	This field shall contain 01, the version number of this definition.
RESCHL	This field shall contain the number of bytes in the field CFHDR.
CFH- DELIM1	This field shall contain the hexadecimal value 0x0A6E1D97. It provides a unique value that can be identified as the beginning of the replacement data.
CFHDR	This field shall contain the byte string replacement for the file header beginning with the FHDR field and continuing for the number of bytes indicated in RESCHL. The file header replication shall at least continue through all the file header fields that are marked for correction.
CFH- DELIM2	This field shall contain the hexadecimal value 0x0ECA14BF. It provides a unique value that can be identified as the end of the replacement data.
RESCHL	A repeat of RESCHL, this field shall contain the number of bytes in the field CFHDR.